

Exhibit K1
Framework for
Sage-grouse Impacts Analysis

Framework for Sage-grouse Impacts Analysis for the Energy Gateway South Transmission Project December 3, 2013

(1) Evaluation of Direct and Indirect Impacts - This portion of the overall Greater Sage-Grouse (hereafter sage-grouse) Impacts Assessment Framework addresses Project-related habitat impacts that bear directly on listing factors considered by the U.S. Fish and Wildlife Service (FWS) when evaluating the need to provide full listing protection under the Endangered Species Act (ESA).

A starting point for this analysis is a thorough review of the threats assessment/five factor analysis that FWS conducted as part of the March 23, 2010 (75 FR 13910), listing of the sage-grouse as a Candidate under ESA. An evaluation of all potential threats to sage-grouse and sage-grouse habitat from the transmission line should be conducted incorporating the latest available scientific information—most of which is referenced in the *Federal Register* notice itself.

Of particular importance is the synthesis evaluation of all potential threats of the Project that operate cumulatively to impact sage-grouse populations and habitat in a way that is not adequately evaluated by examining threats independently. The direct, indirect and cumulative impacts analysis for the Project should consider the *Federal Register* notice cumulative threats assessment summary as an example of how to fully analyze impacts associated with the proposed project. Reference to additional scientific information published since the issuance of the *Federal Register* notice is available on the FWS website and should be incorporated into the analysis: Best available scientific information should be used in the direct, indirect and cumulative impacts analysis.

A project environmental affects analysis of sage-grouse populations that attend leks within 18 kilometers of the Project is a critical component of an indirect impacts analysis for the species. Sage-grouse that attend leks up to 18 kilometers from the Project may be indirectly affected by the loss of habitat functionality during other seasons of the year (Connelly et.al. 2000). The construction of a transmission project or other linear facility may pose additional hindrance of seasonal migration patterns or avoidance of important seasonal habitats once used extensively by local sage-grouse populations. Qualitative and quantitative measures of habitat change must be considered in describing the potential impacts of the Project. In the context of managing a species that requires such a large landscape of habitats to meet their life-cycle needs, and the nature of the proposed disturbance, it is reasonable to make some assumptive predictions about the relative impacts within 18 kilometers.

(2) Addressing Direct Loss of Birds - This piece of the overall Greater Sage-Grouse Impacts Assessment Framework is an important contribution to the range wide jeopardy analysis conducted as part of the informal conferencing process for this Candidate species. Additionally, addressing impacts on populations provides key information needed for completing any potential future formal Section 7 consultation that would be required if the sage-grouse is ultimately listed under ESA during project development, thereby significantly streamlining this process.

FWS is actively working on this issue as it relates to range wide sage-grouse conservation. There are two ways that the Applicant is expected to help resolve this concern:

- (a) Work closely with FWS and state agency biologists to develop an approach to address loss of birds from Project-related impacts and their replacement. This will include development of a monitoring plan utilizing best and most current scientific methods for estimating loss of birds during both construction and operational periods after the Project is constructed. Monitoring would be conducted using a BACI design (preconstruction, post-construction, and control site monitoring) to compare changes in local populations and habitat use that could occur in the analysis area.
- (b) Contribute financially to research projects that have been designed specifically to address this issue.

(3) Mitigation - An impacts analysis that has been conducted in coordination with agency biologists—leading to an adequate understanding of impacts on sage-grouse populations and habitat—is necessary to identify mitigation needs and to develop mitigation plans that focus on the amount and locations of impacts and commensurate mitigation measures and actions. Discussion and evaluation of mitigation should be relevant to local identified impacts and with the understanding that mitigation ratios will remain the same across state lines. That is, a bird in Wyoming is equivalent to one in Colorado or Utah; an acre of nesting habitat in Colorado is worth as much in Wyoming and Utah; etc. Mitigation actions should also focus on localized replacement of ecological values for GSG impacted by the Project with replacement, recovery, or compensation of habitat values planned to be located as closely as possible to where the impacts occurred. However, biological factors may provide a valid basis for adjusting the minimal mitigation ratio beyond one-to-one replacement of values. Three such factors may but are not limited to include: (a) the best available scientific information regarding the relative value of sage-grouse populations contributing to long-term species viability across the species' range points to the relative importance of central and southwestern Idaho, central and northwestern Nevada, eastern Oregon, and the state of Wyoming or other regionally vital populations; (b) regarding individual birds, hens have a much higher biological value, in terms of contribution to populations, than males; and (c) localized habitats of high ecological value including (but not limited to) those serving key functions in demographic, genetic, or seasonal connectivity, important wintering areas, or leks.

There will be two primary components of mitigation, a Project-wide mitigation plan and the Habitat Equivalency Analysis (HEA) described in this section. The mitigation plan will include the HEA as articulated below, as well as any other impacts as identified in the EIS (i.e., indirect impacts) and associated mitigation not included in the HEA.

- (a) An overarching Project-wide sage-grouse mitigation plan will be developed that includes a description of all Project-related impacts and mitigation measures that will be used to offset/compensate for them.
- (b) The HEA provides a standardized basis to determine a one-to-one ratio for habitat services lost/ habitat services mitigated. For this Project, functionality of habitat to support sage grouse is the habitat service of interest. Habitat services lost can be quantified and where possible replacement habitat services of equal kind and value would be provided as mitigation. However, replacement of in-kind habitat services may not be possible in all locations, so habitat services ratio of services lost to services replaced may be greater than 1:1 in some areas

HEA is a method of quantifying the permanent or interim loss of habitat services from Project-related impacts. HEA provides a scientific-based, peer-reviewed method of scaling mitigation requirements, and has been used by federal regulatory agencies including the FWS and National Oceanic and Atmospheric Administration. The HEA is not meant to be an impacts analysis in and of itself; rather, it is a way to objectively determine quantity of Project-related habitat impacts and provides the quantity and type of mitigation necessary to offset loss of habitat services as a form of output.

The HEA process for Gateway South is an Applicant-lead effort that requires close collaboration with state agencies in states sustaining most of the impacts on populations and habitat (Wyoming, Colorado, and Utah) as well as FWS and BLM biologists and local working groups to ensure adequacy of analysis and a corresponding final product. Building models associated with the HEA process must be done in close coordination with agency biologists and local working groups in order to address concerns, questions, assumptions, and issues as they arise.

Agency biologists recognize the need for the incorporation of data and information in the HEA models that the Applicant may not currently have. Agency biologists will work with the Applicant to obtain such information to the extent they can (e.g., habitat maps; adequate vegetation data) again, reiterating the need for an interactive approach between the Applicant and agency biologists in order to ensure adequate completion of the HEA.

The initial starting point for evaluating direct and indirect impacts on sage-grouse habitat will be 18 kilometers either side of the proposed transmission line, addressing impacts on roughly 98 percent of nesting hens according the best available scientific information. Any deviation from this starting point must be supported by scientific literature and collaboratively determined to be appropriate if habitats do not extend to those distances: agency biologists can direct the Applicant to recently published literature on this topic which the Applicant is encouraged to use.

Calculating Density of Disturbance within Key Habitat (Applied in Wyoming only)

Once the analysis is complete and an alternative has been selected, an additional site-specific evaluation of density of disturbance within Key Habitats/Core Areas may be conducted. The purpose of this evaluation is to evaluate opportunities to (1) minimize density of disturbance within Key Habitats/Core Areas that are outside the designated disturbance corridor identified in the Wyoming Governor's Executive Order 2011-5 and (2) restore and/or enhance important sage-grouse habitat as a part of Project-related mitigation. These site-specific habitat evaluations also will enable BLM to: (a) demonstrate compliance with the *Greater Sage-Grouse Habitat Management Policy on Wyoming BLM Administered Public Lands including Federal Mineral Estate* (IM WY-2010-012); and (b) demonstrate consistency with the *Greater Sage-Grouse Core Area Protection*, Wyoming Governor's Executive Order 2011-5. In Colorado and Utah, if density disturbance calculations are completed, they will be closely coordinated with the appropriate state and federal agencies to ensure that each state's Key Habitat areas are appropriately identified and considered in the Density disturbance calculation (DDC).

The overall goal of a Sage-Grouse Key Habitat/Core Area Strategy is to limit the density and duration of disturbances and restrict activities within Key Habitats/Core Areas sufficient to ensure the long-term conservation and management of sage-grouse within each state. To this end, the DDC is a tool designed to measure habitat loss within the Key Habitat/Core Area. In particular, in Wyoming, it is used to determine—in terms of management actions—how the Project-related disturbance can be limited to no more than 5 percent loss of habitat and result in no more than an average of one disturbance per 640 acres.

Step 1: Determination of leks that will be used in the site-specific evaluation:

Place a four-mile boundary around the outer Project boundary (as defined by the proposed area of disturbance related to the Project, i.e., right-of-way width, or similar). All occupied and undetermined sage-grouse leks located within four miles of the outer boundary of the Project, and within Key Habitat/Core Areas, will be considered in the DDC.

Step 2: Determine the DDC area size and configuration:

A four-mile boundary placed around the perimeter of each lek identified in Step 1 and the area within the boundary of the leks, plus the four-mile Project boundary, creates the DDC area for the Project.

Step 3: Density of disturbance habitat evaluation:

Disturbance will be evaluated for the DDC area as a whole, as well as for individual leks within the DDC area. Any portion of the DDC that falls outside Key Habitat/Core Area will be removed from this portion of the evaluation for Wyoming to maintain consistency with the provisions in Wyoming Executive Order 2011-5.

Disturbance Calculation: Total acres of “disturbance” within the DDC area will be determined through an evaluation of:

- a. Existing and proposed disturbance—sage-grouse habitat that is disturbed by existing anthropogenic features or activities (e.g., transmission lines, distribution lines, wind

development, oil/gas wells/facilities, active mine areas, geothermal, communication towers, pipelines, paved and improved roads, and others) and wildfire, including the full right-of-way width of the Proposed Action;

- b. Approved permits (i.e., any state or federal permits providing approval for on the ground actions) for projects not yet implemented or constructed.

Habitat Disturbance Evaluation: In Wyoming, for projects that will result in disturbance of more than 5 percent of the DDC area, it may be advantageous for the Applicant to map the full extent of sage-grouse habitat within the DDC area in order to reduce this percentage. If this is done, it will be conducted to identify:

- a. “Suitable Habitat” and “Marginal Habitat” using BLM’s Habitat Assessment Framework and unsuitable habitats within the DDC area
- b. Sage-grouse evidence of use of suitable habitats (seasonal use, densities based on best available information)
- c. Priority restoration areas (which could reduce the existing disturbances to below the 5 percent threshold), for example:
 - i) Areas where plug and abandon activities on retired oil and gas wells will eliminate disturbance
 - ii) Areas where past reclamation has not produced suitable habitat
- d. Areas of invasive species
- e. Lands where other conservation assurances are in place (e.g., candidate conservation agreement with assurances, easements, habitat contract, etc.)

Step 4: Determination of existing and allowable suitable habitat disturbance:

Acres of disturbance within suitable habitat divided by the total suitable habitat within the DDC area, multiplied by 100, represents the percent of disturbed suitable habitat within the DDC area. In Wyoming, subtracting the percentage of existing disturbed suitable habitat from 5 percent equals new allowable suitable habitat disturbance until plant regeneration or reclamation reduces acres of disturbed habitat within the DDC area.

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